

LAPIN, P.I.; KOMAROV, I.A.; LEONOV, A.G.; MAZURKEVICH, F.S.; MAKAROV, S.N.; MARTEM'YANOV, P.B.; MOSUNOVA, D.I. [deceased]; SAKHAROV, I.M.; SIDNEVA, S.V.; ~~TSITSIN, N.Y.~~, akademik, otv.red.; MAKAROV, S.N., red.izd-va; GUSEVA, A.P., tekhn.red.

[Trees and shrubs; results obtained in the Main Botanical Garden of the Academy of Sciences of the U.S.S.R.] Derev'ia i kustarniki; kratkie itogi introduktsii v Glavnom botanicheskom sadu Akademii nauk SSSR. Moskva, Izd-vo Akad.nauk SSSR, 1959. 190 p. (MIRA 12:10)

1. Moscow. Glavnyy botanicheskiy sad.  
(Trees) (Shrubs)

SOKOLOV, Mikhail Petrovich; TSITSIN, N.V., akademik, otv.red.;  
KARPEKINA, L.S., red.~~izd-va~~; ZENDEL', M.Ye., tekhn.red.

[Botanical gardens, principles of their organization and  
planning] Botanicheskie sady, osnova ikh ustroistva i pla-  
nirovka. Moskva, Izd-vo Akad.nauk SSSR, 1959. 198 p.

(MIRA 12:11)

(Botanical gardens)

TSITSIN, N.V.; GRUZDEVA, Ye.D.

The hybrid *Agropyron glaucum* Roem. et Schult. X *A. repens* (L.)  
P.B. Biul.Glav.bot.sada no.33:53-60 '59. (MIRA 12:10)

1. Glavnyy botanicheskiy sad Akademii nauk SSSR.  
(Agropyron) (Hybridization, Vegetable)

USSR/General Biology - Genetics.

B.

Abs Jour : Ref Zhur - Biol., No 21, 1958, 94656

Author : Tsitsin, N.V.

Inst : \_\_\_\_\_

Title : Significance of Remote Hybridization in Selection of  
Plants and Animals.

Orig Pub : Zh. obshch. biol., 1957, 18, No 6, 409-422

Abstract : The significance is noted of hybridization as a method of obtaining new plant and animal forms owing to the combination of hereditary potency of different species in one organism. The inaccuracy of its consideration is pointed out only as a means for upsetting heridity. Michurin's views are set forth on remote hybridization and the results he achieved by this method are enumerated. It is noted that remote hybridization is a powerful instrument in the hands of other selectors. As examples there are cited the Mayster rye-wheat hybrids, Tsitsiny wheatgrass-wheat

Card 1/3

USSR/General Biology - Genetics.

B.

Abs Jour : Ref Zhur - Biol., No 21, 1958, 94656

hybrids, Shekhurdinyy hard and soft wheats, Kupriyanovyy and Derzhavinyy hard wheat and perennial wild rye and the sorghum-beardgrass hybrids by the same author. Vysotskiy successfully hybridized various species of cotton plants together as well as with mallow and hibiscus. Zosimovich is conducting work with hybrids between sugar beets and wild species of the same family. Ternovskiy as a result of interspecies hybridization of tobaccos provided new good varieties of smoking tobacco. Hybrids of blue and yellow lucerne are widely known. In forestry work is being carried out with hybrid poplars and willows. Excellent interspecies hybrids are obtained in horses, camels, cattle. At present of special interest are hybrids of cattle with zebu and yaks (the hybrids show strong cross-bred vigor, exceed in weight related forms by 25-30%, provide per cow up to 4000 l of milk a year with 5% fat). In fisheries interesting hybrids of carp and various species of sturgeon

Card 2/3

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USSR/General Biology - Genesis.

B.

Abs Jour : Ref Zhur - Biol., No 21, 1958, 94656

are obtained. Mixtures of fox with arctic fox and dog  
with wolf have significant value in animal breeding.  
All this indicates the great promises of remote hybridi-  
zation in the application to plant and animal selection.  
-- A.I. Kuptsov

Card 3/3

USSR/Diseases in Farm Animals. Diseases Caused by Arachno-  
Entoms.

P-2

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54947.

Author : Tsitsin, N. V., Cherkasskiy, Ye. S.

Inst :

Title : Activated Creolin as a Reliable Compound for the Control  
of Scabies in Sheep.

Orig Pub: Ovtsevodstvo, 1957, No 6, 43-44.

Abstract: Satisfactory results were obtained in the prophylactic  
and therapeutic treatment of scabies in several million  
of sheep with a 1 percent water emulsion of commercially  
produced activated creolin. The creolin shipments  
used for this treatment contained 1.16, 1.4, 1.6 and 2  
percent of  $\gamma$ -isomer hexachloran.

Card : 1/1

TSITSIN, N. V. (Academician)

"Problems of Distant Hybridization,"

Lecture to be delivered by Soviet Scientists at the Brussels Exhibition, August 1958. The delivered lectures will be available in English, French, Flemish and German as individual brochures.  
(Priroda, 1958, No. 8, p. 116)

TSITSIN, N.V., akademik,; RUBENKOV, A.A., kand.biol. nauk

Remote hybridization of cattle. Priroda 47 no. 7:104-106 J1 '58.  
(MIRA 11:8)

1. Nauchno-eksperimental'noy khozyaystva "Snegiri," Moskovskoy  
oblasti.

(Dairy cattle breeding)  
(Zebus)

TSITSIN, H.V., akademik

Variety improvement. Nauka i zhizn' 25 no.7:30-32,34 J1 '58.  
(Plant breeding) (MIRA 11:9)

TSITSIN, N.V., akademik; TROSHIN, D.M.

Darwin and problems in modern biology. Priroda 46 no.8:3-14 Ag '57.  
(Darwin, Charles Robert, 1809-1882) (MLBA 10:9)  
(Evolution)

TSITSIN, Nikolay Vasil'yevich, akademik; GORYUNOV, D.V., nauchnyy red.;  
POZHIDAYEVA, M.G., red.; ROZEN, E.A., khudozh. i tekhn. red.

[The big ear of grain] Bol'shoi kolos. Izd-vo "Sovetskaya  
Rossiya," 1960. 30 p. (MIRA 14:3)  
(Grain breeding)

*TSITSIN, P.G.*

TSITSIN, P.G.

Semiautomatic welding of pipes for gaslines. Gor.khoz.Mosk. 29  
no.1:37-38 J '55. (MIRA 8:3)  
(Gas pipes--Welding)

TSITSIN, Petr Georgiyevich; SHAL'NOV, A.P., nauchnyy red.; ZVORYKINA,  
L.N., red. izd-~~va~~; MOCHALINA, Z.S., tekhn. red.

[Application of bituminous coatings on pipes at a plant] Bi-  
tumnaia izoliatsiia trub na zavode. Moskva, Gosstroizdat,  
1963. 122 p. (MIRA 16:4)  
(Protective coatings) (Pipelines)

L 05631-67 EWT(1)/EWT(m)/T/EWP(t)/ETI LJP(c) JD/CC

ACC NR: AP6024505

SOURCE CODE: UR/0181/66/008/007/2258/2260

AUTHOR: Baryshev, N. S.; Vdovkina, Ye. Ye.; Martynovich, A. P.; Nesmelova, I. M.;  
Tsitsina, N. P.; Aver'yanov, I. S.

ORG: none

TITLE: Deep energy levels in indium antimonide  
SOURCE: Fizika tverdogo tela, v. 8, no. 7, 1966, 2258-2260

TOPIC TAGS: indium compound, antimonide, impurity level, forbidden band, Hall effect, carrier density, carrier lifetime, photoconductivity, photoelectromagnetic effect

ABSTRACT: The authors have investigated certain electric properties of single crystals of InSb with uncompensated-impurity density  $10^{12} - 10^{18} \text{ cm}^{-3}$ . The positions of the deep levels in the forbidden band were determined, the concentrations of the corresponding centers obtained, and their recombination properties investigated. The test consisted of measuring the Hall effect and the conductivity in p-type crystals grown by the Czochralski method and doped with germanium, or else obtained by multiple zone melting, in the interval 55 - 300K. The temperature dependence of the Hall coefficient shows, for samples with uncompensated-acceptor density lower than  $10^{14} \text{ cm}^{-3}$ , the presence of two regions of quenching (below the Hall inversion point and at low temperatures) and a sloping region between them. The results are explained by assuming the existence of three levels (shallow donor and acceptor levels and a deep donor level), the degree of filling of which depends on the temperature. To observe

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L 05631-67

ACC NR: AF6024505

the deep levels, the transmission of several samples with carrier density  $n \lesssim 10^{14}$   $\text{cm}^{-3}$  was investigated at 55 and 77K in the spectral interval 5 - 15  $\mu$ . A weak absorption band was observed near 9.3  $\mu$ , and it is attributed to the ionization of the deep levels. Measurements of the stationary photoelectromagnetic effect and the photoconductivity were used also to investigate the temperature dependence of the lifetime of the carriers, and the results obtained agreed with the published data. The authors thank K. Ya. Shtivel'man for a useful discussion. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 23Nov65/ ORIG REF: 004/ OTH REF: 007

Card

2/2 *2/2*

1. TSITSINA, S. I.
2. USSR 600
4. Onions
7. New species of perennial multistage onion, Dost. sel'khoz, No. 12, 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

TSITSINA, S.I.

Prespective species of onion and garlic. Trudy Alma-At. bot.sada 2:  
160-165 '54. (MIRA 9:7)  
(Onions) (Garlic)

TSITSINA, S.I.

Onion varieties of Kazakhstan and possibilities of their cultivation.  
Biul.Glav.bot.sada no.21:30-35 '55. (MIRA 8:12)

1. Alma-Atinskiy botanicheskiy sad Akademii nauk Kazakhskoy SSR.  
(Kazakhstan--Onion)

TSITSINA, S. I.

Acad Sci Kazakh SSR. Inst of Botany

TSITSINA, S. I.- "A study of wild onions of Kazakhstan under cultivation." Acad  
Sci Kazakh SSR. Inst of Botany. Alma-Ata, 1956.  
(Dissertation for the Degree of Candidate in Biological Sciences.)

SO: Knizhnaya Letopis' No. 13, 1956.

TSITSINA, S.I.

Perennial leafy onions. Trudy Alma-At.bot.sada 3:102-104 '56.  
(MLRA 10:3)

(Alma-Ata--Onions)

TSITSINA, S.I.

Significance of Wittrock's rhubarb (*Rheum Wittrockii* Lundstr) as a  
food plant. Trudy Alma-At. bot. sada 4:121-123 '59.

(MIRA 12:12)

(Alma-Ata--Rhubarb)

TSITSINA, S.I.; YASHCHENKO, M.P.; KOCHINSKAYA, N.S.

Some data on biology and biochemistry of *Aconitum Fischeri*.  
Trudy Inst. fiziol. AN Kazakh. SSR 7:74-81 '64.

(MIRA 18:6)

TSITSINA, S.I.; VISLOGUZOVA, N.V.

Cultivation of medicinal plants in the Alma-Ata Botanical  
Garden. Trudy Alma-At. bot. sada 7:149-166 '63. (MIRA 16:10)

TSITSINA, S.I.

Biology of flowering in some onion species. Trudy Alma-At.bot.  
sada 5:151-156 '60. (MIRA 13:6)  
(Alma-Ata--Onions) (Alma-Ata--Garlic)  
(Plants, Flowering of)

BURCHAK-ABRAMOVICH, N.I.; TSITSISHVILI, A.I.

River beavers in Georgia. *Sob. AN Gruz. SSR* 32 no.2:373-380 '63.  
(MIRA 18:1)

1. Institut paleobiologii AN Gruzinskoy SSR. Submitted September 19,  
1962.

TSITSISHVILI, A. L.

TSITSISHVILI, A. L.: "Author's abstract of a dissertation on the subject of  
"Domestic sheep and cattle, based on some material obtained in Georgia",  
presented toward the academic degree of Candidate of Agricultural Science.  
Tbilisi, 1955. Publishing House of the Georgian Agricultural Inst. Min  
Higher Education USSR. Georgian Order of Labor Red Banner Agricultural  
Inst. (Dissertations for the degree of Candidate of Agricultural Science.)

SO: Knizhnaya Letopis' No. 50 10 December 1955. Moscow.

AGADZHANYAN, N.A., mayor med.sluzhby; VAKAR, M.I., podpolkovnik med.sluzhby;  
TSIVILASHVILI, A.S., mayor med.sluzhby; MALKIN, V.B.; CHERNYAKOV,  
I.N., kapitan med.sluzhby

Reaction of the human cardiovascular system during hypoxia. Voen.-  
med.zhur. no.2:65-69 F '60. (MIRA 13:5)  
(ANOXEMIA physiology)  
(CARDIOVASCULAR SYSTEM physiol.)

TSITSISHVILI, D. A., Cand Geol-Min Sci -- (diss) "On the <sup>problem</sup> ~~question~~ of  
the solution of certain problems of engineering geology by methods of  
electroprospection <sup>ing the</sup> in <sup>of</sup> planning high-pressure hydroelectric <sup>power</sup> stations  
in <sup>the</sup> Georgian SSR." Tbilisi, 1958. 11 pp (Min of Higher Education  
USSR, Order of Labor Red Banner Georgian Polytechnic Inst im S. M.  
Kirov), 100 copies (KL, 17-58, 106)

-16-

Tsitsishvili, D. A.

USSR/Physics of the Earth - Geophysical Prospecting, 0-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36479

Author: Tsitsishvili, D. A.

Institution: None

Title: Engineering Electric Prospecting During the Hydraulic Power Construction in the Georgian SSR

Original

Periodical: Tr. In-ta geofiz. AN Gruz SSR, 1955, No 14, 211-216

Abstract: Engineering electric prospecting was one of the basic methods of exploration during the construction of electric power systems in the Georgian SSR. The first work in Georgia on the engineering electric prospecting was performed in 1931-1934. These and subsequent works showed favorable results. The method of deep electric prospecting (vertical-electric sounding and electric profile tracing) is particularly important under conditions of a complicated topography. The regions of the Georgian SSR that have been investigated represent a very variegated picture in their geological structure.

Card 1/3

USSR/Physics of the Earth - Geophysical Prospecting, 0-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36479

Abstract: Using electric prospecting, the following results were obtained.

1. The region of the development of the limestones full of Karst holes. The thickness of the fissure zone was established. The direction of the chain of the Karst funnels was refined, and the clay-sand formations with inclusions of large boulders were differentiated. The electric differentiation of the layers of modern proluvial-alluvial formations turned out to be insufficiently reliable.
2. The region of the development of young lava covers. The thickness of the overlapping formations were determined. A sufficiently distinct differentiation was carried out for the volcanogenic rocks. Underground water streams were detected and traced.
3. The peripheral region of the ancient crystalline massif. The depth of the roof of the crystalline substratum under the sedimentation formations of the chalk was determined. The tectonic disturbance, manifesting itself in the movement of the chalk complex over the granites of the crystalline massif, was displayed quite clearly. The thickness of the covering of the alluvial formations, overlapping the granite-gneisses, was determined.
4. The region of propagation of metamorphic rocks of

Card 2/3

USSR/Physics of the Earth - Geophysical Prospecting, 0-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36479

Abstract: clay-shales of the Lias. The presence of a well-conducting shielding medium (clay, etc) did make it possible to determine the depth of deposition of the roofs of the crystalline rocks, even when the supplied electrodes were separated by 3 km. For areas containing no terrace depositions, the electric determination of the depth of the native rocks turned out to be sufficiently reliable. In the watershed bowl, the depth of the clays was determined. The direction of the flow of underground pressure waters was traced and the presence of low-flowing ground waters was established.

Card 3/3

TSITSISHVILI, D.A.

Results of studying landslides by methods used in electric prospecting. Trudy Inst.geofiz.AN Gruz.SSR 17:357-370 '58.

1. Institut geofiziki AN GruzSSR, Tbilisi.  
(Rioni Valley--Landslides)  
(Electric prospecting)

TSITSISHVILI, D.A.

Growth outlook for the prospecting by electric logging for purposes  
of engineering geology in areas of hydroelectric constructions of  
the Georgian S.S.R. Trudy Inst. geofiz. AN Gruz. SSR 16:79-88 '57.  
(Georgia--Logging (Geology)) (MIRA 11:6)

*TSITSISHVILI, D. A.*

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5, 15-57-5-6853  
p 161 (USSR)

AUTHORS: Chkhenkeli, Sh. M., Tsitsishvili, D. A.

TITLE: Use of Electrical Exploration in Engineering Geology  
(Primeneniye elektrorazvedki dlya resheniya nekotorykh  
zadach inzhenernoy geologii)

PERIODICAL: Tr. In-ta geofiziki AN GruzSSR, 1954, Vol 13, pp 105-107

ABSTRACT: Bibliographic entry

Card 1/1

1

GELASHVILI, G.M.; TSITSISHVILI, D.A.; CHKHENKELI, Sh.M.

An experiment in using electric prospecting for studying rock  
displacement due to undermining. Trudy Inst.geofiz. AN Gruz.  
SSR 15:89-92 '56. (MIRA 10:7)  
(Prospecting--Geophysical methods)

CHKHENKELI, Sh.M.; TSITSISHVILI, D.A.

Using electric prospecting to solve some engineering geological problems. Trudy Inst.geofiz.AN Gruz.SSR 13:105-117 '54.

(MIRA 9:9)

(Engineering geology) (Prospecting--Geophysical methods)

TSITSISHVILI, D.A.

Results of electric prospecting in landslides of local distribution.  
Trudy Inst. geofiz. AN Gruz. SSR 19:139-148 '60. (MIRA 14:9)  
(Samgora region--Electric prospecting) (Landslides)

TSITSISHVILI, D.A.; TATISHVILI, G.V.

Geoelectric characteristics of the sandy strip of the Black  
Sea shore between Sukhumi and Gudauta. Trudy Inst. geofiz.  
AN Gruz. SSR 21:147-153 '63.

(MIRA 18:12)

TSITSISHVILI, D.A.

Geoelectric characteristics of the centers of formation of  
mud torrents in the Durudzhi River basin. Trudy Inst. geofiz.  
AN Gruz. SSR 22:123-131 '64.

(MIRA 18:12)

TSITSISHVILI, D.A.

Engineering electric prospecting at a hydroelectric power construction site in the Georgian S.S.R. Trudy Inst.geofiz.AN Gruz.SSR 14:211-216 '55. (MLRA 9:9)

1.Institut geofiziki Akademii nauk GSSR, Tbilisi.  
(Georgia--Prospecting--Geophysical methods)(Engineering geology)

7817815H111, D.A.

TSITSISHVILI, D.A.; LASHKHI, A.S.

Electric filtration field of certain water power construction areas  
in the Georgian S.S.R. Soob. AN Gruz. SSR 16 no. 4: 269-275 '55.

(MLRA 8:12)

1. Akademiya nauk Gruzinskoy SSR, Institut geofiziki, Tbilisi. Predstavleno chlenom-korrespondentom Akademii G.S. Dzotsenidze  
(Georgia--Water, Underground)

TSITSISHVILI, D.A.; CHANTURISHVILI, L.S.; TATISHVILI, G.V.

Electric potential induced by the action of sea waves in the coastal zone. Soob. AN Gruz. SSR 28 no.2:145-151 F '62. (MIRA 15:3)

1. Akademiya nauk Gruzinskoy SSR, Institut geofiziki, Tbilisi.  
Predstavleno chlenom-korrespondentom AN GruzSSR P.G.Shengeliya.  
(Georgia--Electric prospecting) (Waves)

124-58-6-6370

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 6, p 11 (USSR)

AUTHOR: Tsitsishvili, D. D.

TITLE: The Mechanics of the Rolling of a Wheel and a Method for Determining a Wheel Coefficient of Rolling Resistance (Izucheniye mekhaniki kacheniya kolea i metod opredeleniya koeffitsiyenta perekatyvaniya kolea)

PERIODICAL: Tr. Gruz. s. -kh. in-ta, 1957, Vol 44, pp 363-372

ABSTRACT: Bibliographic entry

1. Mechanics    2. Wheels--Properties    3. Wheels--Friction

Card 1/1

791757120010-7  
USSR/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61854

Author: Gogorishvili, P. V., Karkarashvili, M. V., Tsitsishvili, D. L.

Institution: None

Title: Separate Determination of Hydrazine and Ammonia in Complex Ammonia-Hydrazine Compounds

Original

Periodical: Zh. neorgan. khimii, 1956, 1, No 2, 232-242; Tr. In-ta khimii AN Gruz. SSR, 1956, 12, 101-117; Georgian

Abstract: In analyzing ammonia-hydrazine mixtures and complex compounds  $N_2H_4$  is determined by potentiometric titration with  $KMnO_4$  solution. The reaction takes place quantitatively with formation of  $N_2$  and  $NH_3$  at  $50-55^\circ$  in  $H_2SO_4$  medium.  $NH_3$  is determined according to Kjeldahl after preliminary oxidation of  $N_2H_4$  to  $N_2$  with 8-10-fold excess of  $CuO$  or  $MnO_2$  in acid medium.

Card 1/1

TSITSISHVILI, D.R.

New method for arresting atonic uterine hemorrhages under  
experimental and clinical conditions. Eksper. khir. 5  
no. 5:63-64 '60. (MIRA 14:1)  
(HEMORRHAGE, UTERINE)

*Tsitsishvili, G.*

USSR/Cultivated Plants. Potatoes. Vegetables. Melons

M-5

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1552

Author : N. Tsitsishvili, G. Tsitsishvili, T. Kiparenko, B. Chikhladze  
Inst : Not Given  
Title : A Chemical Study of the Potato Made at the Bakuriani Botanical Garden

Orig Pub : Tr. Tbilissk. un-ta, 1956, 60, 121-128

Abstract : The average chemical composition of 54 varieties of the 1953 potato crop: moisture 72.44%, dry residue 27.56, starch 19.77, aggregate nitrogen 0.46, ash 1.35%, vitamin C 2.41mg%. The low vitamin C content is explained by continuous storing of potatoes (8 months) under heterogeneous conditions. Outstanding in starch content as calculated by their dry matter are the following varieties: Sibiryak 84.67%, Silosnyy 82.74, Sileziya 82.25, and Ostbote 81.35%.

Card : 1/1

TAVADZE, F.N., otv. red.; AGLADZE, R.I., red.; ARCHVADZE, Sh.R., red.;  
VACHNADZE, N.D., red.; GVELESIANI, G.G., red.; GUDZHEDZHIANI, B.I., red.;  
DZHANELIDZE, A.I., red.; DZOTSENIDZE, G.S., red.; DURMISHIDZE,  
S.V., red.; KETSKHOVELI, N.N., red.; MIKELADZE, I.S., red.;  
RUBINSHTEYN, M.M., red.; TVALCHRELIDZE, A.A., red., [deceased],;  
(TSITSISHVILI, G.V., red.; SHENGELIYA, P.G., red.; FEODOT'YEV,  
K.M., red. izd-va.; GUSEVA, A.P., tekhn. red.

[Natural resources of the Georgian S.S.R.] Prirodnye resursy  
Gruzinskoi SSR. Moskva. Vol. 1. [Metalliferous minerals] Metallicheskie  
poleznye iskopaemye. 1958. 230 p. (MIRA 11:11)

1. Akademiya nauk Gruzinskoy SSR, Tiflis. Sovet po izucheniyu  
proizvoditel'nykh sil. 2. Chlen-korrespondent AN Gruz. SSR (for Tavadze).  
(Georgia--Ore deposits)

TSITSISHVILI, G.V.: SESIASHVILI, D.D.

Magnetochemical investigation. Trudy Inst. khim. AN Gruz. SSR 13:  
17-22 '57. (MIRA 11<sup>3</sup>/<sub>4</sub>)

(Phenol--Magnetic properties)

TSITSISHVILI, G.V.; ARNVADZE, I.Z. [deceased].

Kinetics of the adsorption of alcohols and ethers by clay. Trudy  
Inst. khim. AN Gruz. SSR 13:23-45 '57. (MIRA 11:4)  
(Adsorption) (Clay)

TSITSISHVILI, G.G.

KARBELASHVILI, O.D.; TSITSISHVILI, G.G.

Testing the system of working extremely narrow veins by breaking the ore through preliminary upraises. Soob.AN Gruz.SSR 18  
no.6:719-726 Je '57. (MIRA 10:10)

1. AN GSSR, Institut metalla i gornogo dela, Tbilisi. Predstavleno akademikom R.I.Agladze.

(Mining engineering)

*TSITSISHVILI*  
KARBELASHVILI, O.D.; TSITSISHVILI, G.G.

Mining extremely thin veins. Soob. AN Gruz. SSR 16 no. 4: 291-297 '55.  
(MLRA 8:12)

1. Akademiya nauk Gruzinskoy SSR., Institut metalla i gornogo dela,  
Tbilisi. Predstavleno deystvitel'nyy chlenom Akademii R. I. Agladze  
(Mining engineering)

TSITSISHVILI, G.V.

Improvement in cleaning and sprinkling streets. Gig. i san. 24 no.9:  
80 S '59. (MIRA 13:1)

1. Iz Nauchno-issledovatel'skogo instituta sanitarii i gigiyeny  
Ministerstva zdravookhraneniya Gruzinskoy SSR.  
(STREET CLEANING)

VEKUA, N.P.; TSITSKISHVILI, A.R.

All-Union Conference on the Application of Methods of the Theory  
of Functions to Problems of Mathematical Physics, held at Tbilisi.  
Usp. mat. nauk 16 no.4:243-247 J1-Ag '61. (MIRA 14:8)  
(Tiflis--Mathematics--Congresses) (Functions)

TSITSKISHVILI, A.R.

Seepage from a shallow channel, allowing for the incline of a natural stream of ground water. Trudy Mat. inst. AN Gruz.

SSR 27:359-366 '60.

(MIRA 15:3)

(Soil percolation) (Water, Underground)

SOV/6195

TSITSISHVILI, G.V.

PHASE I BOOK EXPLOITATION

Nauchnaya konferentsiya institutov khimii Akademiy nauk Azerbaydzhanskoy, Armyanskoy i Gruzinskoy SSR. Yerevan, 1957.

Materialy nauchnoy konferentsii institutov khimii Akademiy nauk Azerbaydzhanskoy, Armyanskoy i Gruzinskoy SSR (Materials of the Scientific Conference of the Chemical Institutes of the Academies of Sciences of the Azerbaydzhan, Armenian, and Georgian SSR) Yerevan, Izd-vo AN Armyanskoy SSR, 1962. 396 p. 1100 copies printed.

Sponsoring Agency: Akademiya nauk Armyanskoy SSR. Institut organicheskoy khimii.

Resp. Ed.: L. Ye. Ter-Minasyan; Ed. of Publishing House: A. G. Silkuni; Tech. Ed.: G. S. Sarkisyan.

PURPOSE: This book is intended for chemists and chemical engineers, and may be useful to graduate students engaged in chemical research.

Card 1/11 2

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R00175712

S. G. Muradova. The synthesis and Formation on the

1ST AND 2ND SERIES										3RD AND 4TH SERIES									
PROCESSING AND PROPERTY INDEX																			
<p>CA</p> <p>2</p> <p><u>Intramolecular hydrogen bond in imidazole.</u> G. V. Tsitsishvili. <i>J. Phys. Chem.</i> (U. S. S. R.) 15, 1082-6 (1941).—Theoretical. The resonances of the possible structures of imidazole were calculated. The H is not localized on either N atom; the time of transfer, <math>10^{-14}</math> sec., is too small to permit of isolation of either of the two structures. Imidazole-d should show a different spectrum. F. H. R.</p>																			
A 55-55 A METALLURGICAL LITERATURE CLASSIFICATION																			
FROM SYMBOL										FROM SYMBOL									
SERIES 1										SERIES 2									
SERIES 3										SERIES 4									

**LA**

**2**

Investigating the adsorptive properties of natural ad-  
sorbers—Georgia bentonite. G. V. Tsvetkov and  
I. Z. Arvedson. *J. Applied Chem.* (U.S.S.R.) 18, 573-6  
(1948).—To study the adsorptive properties of bentonite,  
the following materials were tested: asphalt, gummin,  
and asphal. The vapors of the following were used in  
the tests: benzene, toluene, xylene, benzine, ether,  
acetone, and ethyl alc. For comparison, activated char-  
coal was also used as an adsorbent. The results indicate  
a certain adsorption equil. which decreases with increas-  
ing concn. Acetone, etc., and ether are adsorbed by ben-  
tonite material much better than the other reagents men-  
tioned. The reverse is true for the charcoal. J. S. J.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNONYM      TO SYNONYM

SERIALS ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN ELEVEN TWELVE THIRTEEN FOURTEEN FIFTEEN SIXTEEN SEVENTEEN EIGHTEEN NINETEEN TWENTY TWENTYONE TWENTYTWO TWENTYTHREE TWENTYFOUR TWENTYFIVE TWENTYSIX TWENTYSEVEN TWENTYEIGHT TWENTYNINE THIRTY THIRTYONE THIRTYTWO THIRTYTHREE THIRTYFOUR THIRTYFIVE THIRTSIX THIRTYSEVEN THIRTYEIGHT THIRTYNINE FORTY FORTYONE FORTYTWO FORTYTHREE FORTYFOUR FORTYFIVE FORTYSIX FORTYSEVEN FORTYEIGHT FORTYNINE FIFTY FIFTYONE FIFTYTWO FIFTYTHREE FIFTYFOUR FIFTYFIVE FIFTYSIX FIFTYSEVEN FIFTYEIGHT FIFTYNINE SIXTY SIXTYONE SIXTYTWO SIXTYTHREE SIXTYFOUR SIXTYFIVE SIXTYSIX SIXTYSEVEN SIXTYEIGHT SIXTYNINE SIXTYTEN SIXTYELEVEN SIXTYTWELVE SIXTYTHIRTEEN SIXTYFOURTEEN SIXTYFIFTEEN SIXTYSIXTEEN SIXTYSEVENTEEN SIXTYEIGHTEEN SIXTYNINETEEN SIXTYTWENTY SIXTYTWENTYONE SIXTYTWENTYTWO SIXTYTWENTYTHREE SIXTYTWENTYFOUR SIXTYTWENTYFIVE SIXTYTWENTYSIX SIXTYTWENTYSEVEN SIXTYTWENTYEIGHT SIXTYTWENTYNINE SIXTYTHIRTY SIXTYTHIRTYONE SIXTYTHIRTYTWO SIXTYTHIRTYTHREE SIXTYTHIRTYFOUR SIXTYTHIRTYFIVE SIXTYTHIRTYSIX SIXTYTHIRTYSEVEN SIXTYTHIRTYEIGHT SIXTYTHIRTYNINE SIXTYFORTY SIXTYFORTYONE SIXTYFORTYTWO SIXTYFORTYTHREE SIXTYFORTYFOUR SIXTYFORTYFIVE SIXTYFORTYSIX SIXTYFORTYSEVEN SIXTYFORTYEIGHT SIXTYFORTYNINE SIXTYFIFTY SIXTYFIFTYONE SIXTYFIFTYTWO SIXTYFIFTYTHREE SIXTYFIFTYFOUR SIXTYFIFTYFIVE SIXTYFIFTYSIX SIXTYFIFTYSEVEN SIXTYFIFTYEIGHT SIXTYFIFTYNINE SIXTYSIXTY SIXTYSIXTYONE SIXTYSIXTYTWO SIXTYSIXTYTHREE SIXTYSIXTYFOUR SIXTYSIXTYFIVE SIXTYSIXTYSIX SIXTYSIXTYSEVEN SIXTYSIXTYEIGHT SIXTYSIXTYNINE SIXTYSEVENTY SIXTYSEVENTYONE SIXTYSEVENTYTWO SIXTYSEVENTYTHREE SIXTYSEVENTYFOUR SIXTYSEVENTYFIVE SIXTYSEVENTYSIX SIXTYSEVENTYSEVEN SIXTYSEVENTYEIGHT SIXTYSEVENTYNINE SIXTYEIGHTY SIXTYEIGHTYONE SIXTYEIGHTYTWO SIXTYEIGHTYTHREE SIXTYEIGHTYFOUR SIXTYEIGHTYFIVE SIXTYEIGHTYSIX SIXTYEIGHTYSEVEN SIXTYEIGHTYEIGHT SIXTYEIGHTYNINE SIXTYNINETY SIXTYNINETYONE SIXTYNINETYTWO SIXTYNINETYTHREE SIXTYNINETYFOUR SIXTYNINETYFIVE SIXTYNINETSIX SIXTYNINETYSEVEN SIXTYNINETEIGHT SIXTYNINETYNINE SIXTYSEVENTY

TSITSISHVILI, G. V. Dr. Chem. Sci.

Dissertation: "Intermolecular Interaction and Certain Physicochemical Properties of Hydrogen Fluoride and Partially of Other Hydrogen Halides."  
Sci Res Order of the Labor Red Banner Inst imeni L. Ya. Karpov, 30 Jun 47.

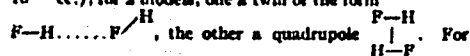
SO: Vechernyaya Moskva, Jun, 1947 (Project #17836)

64

5

Energies and frequencies of the ionic structures of hydrogen fluoride and hydrogen chloride. G. V. Talsish-vil. *Zhur. Fiz. Khim.* 25, 1177-9(1949).—The dependence of the bond energy  $E$  on the interionic distance  $r$  is calcd. If HF and HCl were ionic compds., the min.  $E$  would be 0.53 and 0.06 e.v., the corresponding  $r$  would be 1.2 and 1.8 Å., and the characteristic frequencies 2870 and 1800  $\text{cm}^{-1}$ , resp. The exptl. values are smaller for  $r$  and greater for the frequencies; this shows that the bonds in HF and HCl are less polar than pure ionic bonds. I. I. B.

Association of hydrogen fluoride. G. V. Tsetskhovil  
(Chem. Inst., Acad. Sci. Georgian S.S.R., Tbilisi). *Tr.  
vest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950,  
182-8(1960).—The energy of the  $H_2F_2$  mol. is calcd., on  
the basis of the const. of HF (dissoc.  $E = 6.68$  e.v. =  
153.97 kcal., H-F distance 0.92 Å., vibration frequency  
4141  $cm^{-1}$ , dipole moment 1.91 D., polarizability  $\sim 0.8 \times 10^{-24}$  cc.), for 2 models, one a twin of the form



the other a quadrupole. For the twin model, with a P-F distance of 2.55 Å. (from electron diffraction data), the sum  $\Delta E$  of the energies of attraction and of repulsion, calcd. from the energies of dipole, dispersion, inductive, and repulsive interaction, is pos. for all values of the angle  $\phi$  between the 2 HF mols. Consequently, this model cannot account for the stable  $H_2F_2$  mol. A pos.  $\Delta E$  is likewise obtained for the quadrupole model with the distance between the dipoles = 2.35, 2.55, or 2.75 Å. If, however, the polarity of the H atoms is taken into account by multiplying each exchange integral by a suitable coeff., the twin model gives a stable configuration (neg.  $\Delta E$ ) with a P-F distance of 2.55 Å. and an angle  $\phi = 60^\circ$ . The bonding energy of the twin is calcd. to 4.6 kcal./mole, and, with the change of the zero energy taken into account, 5.3 kcal.; the quadrupole model gives 0.7 kcal. The twins assoc. further, which results in an increase of the mol. polarization, in agreement with the exptl. effect of pressure. For hexamers, produced by assocn. of 3  $H_2F_2$  twins, the energy is 32 kcal. for the chain form, and 34 kcal. for the ring form. These models are consistent with the exptl. high dielec. const. and the wide temp. range of the liquid state. The chain assocn. accounts also for the high value (0.612) of the ratio of the heats of fusion and of evapn. N. Thon

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**CIA-RDP86-00513R001757120010-7**

**APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757120010-7"**

TSITSISHVILI, O. V.

Chemical Abst.  
Vol. 48 No. 9  
May 10, 1954  
General and Physical Chemistry

✓ Errors of A. A. Kalandiya in his paper "Calculation of the  
molecular volumes of inorganic compounds of type  $A_3B_2O_8$ ,"  
and his attempts to support the erroneous "resonance" con-  
cept. G. V. Tsitsishvili. J. Gen. Chem. U.S.S.R. 22,  
2301-5 (1952) (Engl. translation).—See C.A. 47, 4688a.  
H. L. H.

2  
Chem

**"APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757120010-7**

**APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757120010-7"**

USSR/Chemistry

Card 1/1    Pub. 151 - 36/36

Authors    : Kalandiya, A. A.

Title       : Reply to the report by G. V. Tsitsishvili regarding A. A. Kalandiya's work  
entitled, "Calculation of Molecular Volumes of Inorganic  $A_nB_mO_s$  Type Compounds"

Periodical : Zhur. ob. khim. 24/1, 193-196, Jan 1954

Abstract    : A public and highly critical exchange of views between the author of the article entitled, "Calculation of Molecular Volumes of Inorganic  $A_nB_mO_s$  Type Compounds", A. A. Kalandiya, and the critic of the article, G. V. Tsitsishvili, is presented. Eleven USSR references (1936-1952).

Institution : ...

Submitted   : May 14, 1953

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**CIA-RDP86-00513R001757120010-7**

**APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757120010-7"**

USSR/Physical Chemistry - Crystals, B-5

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 196

Author: Tsitsishvili, G. V.

Institution: Academy of Sciences Georgian SSR

Title: Lattice Energy of Hydrogen Fluoride

Original

Periodical: Soobshch. AN GruzSSR, 1955, Vol 16, No 9, 687-690

Abstract: The lattice energy  $U$  of hydrogen fluoride, which is equal to its heat of sublimation at  $0^\circ \text{K}$ , is represented as the sum of dipole  $U(\text{dip})$ , dispersion  $U(\text{dis})$ , induction  $U(\text{ind})$ , and repulsion  $U(\text{rep})$  interactions and modifications of the zero-point energy  $\Delta U_0$  during the gas  $\rightarrow$  solid transition:  $U = U(\text{dip}) + U(\text{dis}) + U(\text{ind}) + U(\text{rep}) + \Delta U_0$ .  $U(\text{dip})$  is calculated from the effective charges on the chemically bonded H and F atoms and  $U(\text{dis})$  is calculated by a modified London-Slater-Kirkwood treatment developed by the author (Soobshcheniya AN GSSR, 1946, Vol XII, Nos 1-2, 11);  $U(\text{ind})$  was calculated by the usual method and  $U(\text{rep})$  was calculated from electronographic data;  $\Delta U_0$  was

Card 1/2

USSR/Physical Chemistry - Crystals, B-5

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 196

Abstract: determined from spectroscopic data. A value of 5.3 kcal/mol was found for U. Calculation on the basis of thermal data according to the law of Hess gave a  $U = 3.3$  kcal/mol.

Card 2/2

USSR/Chemistry - Physical chemistry

Card 1/1      Pub. 22 - 34/52

Authors      :    Tsitsishvili, G. V., and Barnabishvili, D. N.

Title        :    About the nature of the adsorption hysteresis of benzene vapors in  
the form of pores in clay

Periodical   :    Dok. AN SSSR 101/4, 711-714, Apr 1, 1955

Abstract    :    Literature and experimental data are presented on the adsorption  
hysteresis of benzene vapors in various natural and activated clays.  
The existence of a reversible hysteresis in clays was established.  
The very fact of the existence of such hysteresis in clays confirms  
the existence of pores and cavities. The types of pores found in  
clays and their effect on the adsorption hysteresis are described.  
Nine references: 7 USSR and 2 USA (1935-1953).    Graphs.

Institution   :    Acad. of Sc., Georg-SSR, The P. G. Melikishvili Inst. of Chem.

Presented by :    Academician M. M. Dubinin, September 14, 1954

TAITSISHVILI, G. V.

Category: USSR / Physical Chemistry - Surface phenomena. Adsorption, Chromatography, Ion exchange.

B-13

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30178

Author : Taitsishvili G. V., Topuria Z. M.

Inst : Academy of Sciences Georgian SSR. Institute of Chemistry.

Title : Study of Kinetics of Sorption and Desorption of the Vapor of Water, Methyl and Ethyl Alcohol at Ascanite, Silicagel and Aluminagel

Orig Pub: Tr. In-ta khimii AN GruzSSR, 1956, 12, 3-21

Abstract: By means of a dynamic sorption unit in combination with a sorption microbalance, measurements were carried out, at velocities of the air vapor mixture of 0.012 and 0.12 liter/minute  $\text{cm}^2$ , of adsorption and desorption kinetics of  $\text{H}_2\text{O}$ ,  $\text{CH}_3\text{OH}$  and  $\text{C}_2\text{H}_5\text{OH}$  at Georgian ascanite (I), silicagel (II) and alumogel (III). It is shown that at I, in all instances, and at II and III in the case of  $\text{H}_2\text{O}$ , the limiting stage of the process is the internal diffusion of vapor in the interstices of I-III; in the case of  $\text{CH}_3\text{OH}$  and  $\text{C}_2\text{H}_5\text{OH}$  at II,

Card : 1/2

-3-

Category: USSR / Physical Chemistry - Surface phenomena. Adsorption,  
Chromatography. Ion exchange.

B-13

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30178

kinetics is determined primarily by external diffusion, and at III  
by internal diffusion of vapor. A method is proposed for an approxi-  
mate evaluation of the influence of internal and external diffusion  
on kinetics of vapor sorption.

Card : 2/2

-4-

TSITSISHVILI, G. V.

Category: USSR / Physical Chemistry - Surface phenomena. Adsorption.  
Chromatography. Ion exchange,

B-13

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30200

Author : Tsitsishvili G. V.

Inst : Institute of Chemistry, Academy of Sciences Georgian SSR

Title : Some results of Adsorption-Structural Studies of Georgian Bentonite  
Clays.

Orig Pub: Tr. In-ta khimii AN GruzSSR, 1956, 12, 235-250

Abstract: A presentation of the results of systematic investigations of porous structure and adsorption properties of bentonite clays (BC) of Georgia (ascagel, gumbrin, ascanite) and (for comparison) of activated charcoal, silicagel and alumogel. Dynamic activity of the sorbents was studied in relation to  $C_6H_6$  vapor and pyridine bases, and the holding capacity in relation to vapors of organic substances of different polarity. The gravimetric method was used to determine kinetics of sorption of the vapors of  $H_2O$ , alcohols,  $C_6H_6$ ,  $(C_2H_5)_2O$  and ethyl

Card : 1/2

-17-

TSITSISHVILI, G.V.

REVISION 1.0

24(6) 13 FROM 1 BOOK EXPLANATION 20/11/68

Strukturnaya po molodam isledovaniyu strukturny vysocheyshykh i poristyykh bel.

24, Leningrad, 1956.

It is a book on the structure of highly dispersed and porous bodies. It is a book on the structure of highly dispersed and porous bodies. It is a book on the structure of highly dispersed and porous bodies.

Sponsoring Agencies: Akademiya nauk SSSR. Institut fizicheskoy khimii and Institut khimii silikatov.

Rep. M. I. Dobinin, M. M. Akhmedov; Ed. of Publishing House: Naukova, L. I. Tech. Ed.: Markovich, S. M.

PURPOSE: This book is intended for scientists, teachers and advanced students interested in the structural analysis of highly dispersed and porous bodies.

CONTENTS: This collection contains reports by members of various Soviet institutions of higher education: Institute of Physical Chemistry, AS USSR; Institute of Chemistry, AS Georgian SSR; Far Eastern Branch, AS USSR; Georgian Scientific Research Institute for Petroleum, State Optical Institute; Leningrad Technological Institute; Moscow and Leningrad State Universities; Far Eastern Polytechnical Institute; "Agrophysical" Institute, and others. The book contains reports by Professor E. A. Toropov, Director of the Institute of Physical Chemistry. Apart from reports under the four subject divisions (see Table of Contents), the collection includes discussions, considerations and proposals made at the close of the conference.

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Moskaleva (By contributing authors: E. D. Kabanov, Moscow State University Ioni M. V. Lomonosov, and D. P. Dobychin, Leningrad State University Ioni I. I. Vorobiev)	159
G. Comparison of the Results of Employing the Adsorption Method With Data From Other Methods of Studying Structure	161
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Card 2/9

ISIDOROV, G. V.; IERMOLYENKO, N. P.; DOBRYNIN, M. P.; SERGEYEV, B. P.; GEMFARSKIY, I. I.;  
LUK'YANOVICH, V. M.; RADUSHKEVICH, L. V.;

"The adsorption from vapors and liquids."

report presented at the Fourth All-Union Conference on Colloidal Chemistry,  
Tbilisi, Georgian SSR, 12-16 May 1958 (Koll zhur, 20,5, p.677-9, '58, Taubman, A.B)

TSITSISHVILI, G.V.; BARNABISHVILI, D.N.

Some adsorption and structural properties of Askan clay and gel.  
Trudy Inst.khim.AN Gruz.SSR 14:23-35 '58. (MIRA 13:4)  
(Clay) (Askangel)

TSITSISHVILI, G.V., akademik; ANDRONIKASHVILI, T.A.; CHUMBURIDZE, T.A.;  
KORIDZE, Z.I.

Chromatographic separation of a mixture of hydrocarbon gases  
C<sub>1</sub> - C<sub>4</sub> on X-type zeolites with a different content of calcium  
cations. Dokl. AN SSSR 156 no. 4:932-934 Je '64. (MIRA 17:6)

1. Institut khimii im. P.G.Melinishvili AN GruzSSR. 2. AN Gruz  
SSR (for TSitsishvili).

TSITSISHVILI, G.V., akademik; SIDAMONIDZE, Sh.I.

Effect of radiation on the adsorptive and catalytic properties  
of aluminum oxide. Soob. AN Gruz. SSR 31 no. 3:575-576  
S '63. (MIRA 17:7)

1. Akademiya nauk GruzSSR (for TSitsishvili).

ACCESSION NR: AT4026430

8/2531/63/000/139/0115/0121

AUTHOR: Yefimova, N. A.; Tsitsenko, G. V.

TITLE: Comparison of the experimental and computational methods for determination of the temperature of the surface of the human body

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy\*, no. 139, 1963. Teplovoy balans (Heat balance), 115-121

TOPIC TAGS: meteorology, physiology, bioclimatology, climate, human heat balance, body surface temperature

ABSTRACT: During the past few years, the Glavnaya geofizicheskaya observatoriya (Main Geophysical Observatory) has been studying the influence of climatic factors on human heat balance. A computational method has been developed for determination of the mean temperature of the surface of the human body as an index of dependence on meteorological factors, physiological data, type of clothing and other factors. Experimental work to check this method was carried out in Armenia in August 1961. Meteorological measurements were made by the Main Geophysical Observatory and physiological parameters were determined by the Institut Obshchey i Kommunal'noy Gigieny Akademii Meditsinskikh Nauk SSSR (Institute of General and Communal Hygiene of the USSR Academy of Medical Sciences). The observations were

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ACCESSION NR: AT4026430

made on the shores of Lake Sevan and at Yerevan. This made it possible to check the computational method under a great range of meteorological conditions in the summer season. The experimental conditions are described in detail. The physiological studies are described briefly; local inhabitants between the ages of 15 and 38 were subjects. The mean temperature of the skin was computed using the heat balance equation for the human body:

$$\left[ \left( S' \frac{c_{ig} h}{\pi} + \frac{1}{2} q + \frac{1}{2} Q_{z_0} \right) (1 - a) - \frac{1}{2} I_0 + 2\sigma\epsilon^3 (\theta_0 - \theta) \right] \times \\ \times \frac{\rho c_p D'}{\rho c_p D' + \rho c_p D + 4\sigma\epsilon^3} + M = \rho L D (e_s - e) a \frac{\rho c_p D'}{\rho c_p D' + \rho c_p D} + \\ + \left( \frac{\rho c_p D'}{\rho c_p D' + \rho c_p D + 4\sigma\epsilon^3} \right) [(\rho c_p D + 4\sigma\epsilon^3) (\theta_s - \theta)]. \quad (1)$$

Further details concerning the physiological examinations have been published elsewhere (Budyko and Tsitsenko, Izv. AN SSSR, ser. geofr., No. 3, 1960; Tsitsenko, Trudy Glavnoy geofizicheskoy observatorii, no. 139, 1963). A total of 217 experiments was made. The computed and observed values are compared and discrepancies are explained. The field observations in Armenia were supplemented by observations in November, 1961 in an artificial climate chamber of the Moskovskiy Institut Obshchey i Kommunal'noy Gigieny (Moscow Institute of General and Communal

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ACCESSION NR: AT4026430

Hygiene) in which a wide range of temperatures and humidities could be simulated. The comparisons between observed and computed values confirm, with minor exceptions, the validity of the computational method. Orig. art. has: 1 formula and 6 figures.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, <sup>Leningrad.</sup> (Main Geophysical Observatory)

SUBMITTED: 00

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: LS

NO REF SOV: 002

OTHER: 000

Card 3/3

BARNABISHVILI, D.N.; TSITSISHVILI, G.V.; BEZHASHVILI, K.A.

Acid activation and the bleaching properties of gumbrin. Trudy  
Inst.khim.AN Gruz.SSR 14:37-52 '58. (MIRA 13:4)  
(Gumbrin)

TSITSISHVILI, Georgiy Vladimirovich

[Sorpton processes] Sorbtionnye protsessy. Tbilisi, Izd-vo  
Tbilisskogo gos.univ. im. Stalina, 1959. 465 p. (MIRA 13:3)  
(Sorpton)

TSITSISHVILI, G. V.

"The Adsorptional Properties and the Structure of Montmorillonites."

report presented at the Section on Colloid Chemistry, VIII Mendeleyev Conference of General and Applied Chemistry, Moscow, 16-23 March 1959.  
(Koll. Zhur. v. 21, No. 4, pp. 509-511)

TSITSISHVILI, G.V.

Characteristics of the porosity of natural adsorbents. Trudy Inst.  
khim.AN Azerb.SSR 17:6-8 59. (MIRA 13:4)

1. Institut khimii AN GruzSSR.  
(Adsorbents) (Porosity)

CHIKHELIDZE, S.S.; TAVADZE, F.N., akademik, otv. red; AGLADZE, R.I., red.;  
 ARCHVADZE, Sh.R., red.; VACHNADZE, N.D., red.; GVELISIANI, G.G.,  
 red.; GUDZHEDZHIANI, B.I., red.; DZHANELIDZE, A.I., red.;  
 DZOTSENIDZE, G.S., red.; DURMISHIDZE, S.V., red.; KETSKHOVELI, N.N.,  
 red.; MIKELADZE, I.S., red.; RUBINSHTEYN, M.M., red.; TVALCHRELIDZE,  
 A.A., red.[deceased]; TSITSISHVILI, G.V., red.; SHENGELIYA, P.G.,  
 red.; FEDOT'YEV, K.M., red.izd-va; DOROKHINA, I.N., tekhn. red.

[Natural resources of the Georgian S.S.R.] Prirodnye resursy Gru-  
 zinskoi SSR. Moskva, Izd-vo Akad.nauk SSSR. Vol.3. [Mineral water]  
 Mineral'nye vody. 1961. 438 p. (MIRA 14:12)

1. Akademiya nauk Gruzinskoy SSR, Tiflis. Sovet po izucheniyu pro-  
 izvoditel'nykh sil. 2. Akademiya nauk Gruzinskoy SSR (for Tavadze).  
 (Georgia—Mineral water)

TSITSISHVILI, G.V.

Effect of polarity on intermolecular activity. Soob. AN Gruz. SSR  
26 no.2:153-159 '61. (MIRA 14:4)

1. Akademiya nauk Gruzinskoy SSR, Institut khimii im. P.G. Melikishvili.  
Chlen-korrespondent AN Gruzinskoy SSR.  
(Molecules)

S/062/62/000/006/006/008  
B117/B101

AUTHORS: Tsitsishvili, G. V., Bagratishvili, G. D., Andrianov, K. A.,  
Khananashvili, L. M., and Kantariya, M. L.

TITLE: Study of infrared spectra of cyclic organosiloxanes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh  
nauk, no. 6, 1962, 1014 - 1019

TEXT: Infrared spectra of octamethyl cyclotetrasiloxane (I), trimethyl  
triphenyl cyclotrisiloxane (III), tetramethyl tetraphenyl cyclotetrasilox-  
ane (IV), and 8 cycloorganotetrasiloxanes with methyl, ethyl, ethoxyl,  
butoxyl, phenyl, vinyl, and nitrile groups were investigated. The infrared  
spectra of (I), (III), and (IV) agreed with those described in the litera-  
ture. The spectra of the other 8 cycloorganotetrasiloxanes were obtained  
for the first time. Stretching vibrations of the Si-O-Si group were de-  
termined for all organotetrasiloxanes in the form of broad, very intense  
1080-1089  $\text{cm}^{-1}$  bands; the positions of these were constant and scarcely  
effected by the character and number of the substituents. The correspond-  
ing band of the trimers appears at 1020  $\text{cm}^{-1}$  and is less intense. The  
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bands corresponding to the stretching vibrations of the  $\text{CH}=\text{CH}_2$  group were found for compounds with 1 to 3 vinyl groups at  $1596\text{ cm}^{-1}$ ; they became more intense with increasing number of these groups. The lower frequency of stretching vibrations of the  $\text{C}=\text{C}$  bond is due to the strong effect of the Si atom on the vinyl group. This effect is greater than that of the conjugate phenyl ring, and is commensurable with the effect of conjugate  $\text{C}=\text{C}$  or  $\text{C}=\text{O}$  bonds. The bands of the vinyl group found at  $959$  and  $1006\text{ cm}^{-1}$  originate in uneven deformation vibrations of the  $\text{CH}$  bond in  $=\text{CH}_2$  and  $=\text{CH}$ .

The intensity of these bands grows proportionally with the number of vinyl groups. Bands corresponding to stretching vibrations of the  $\text{Si}-\text{C}_6\text{H}_5$  group were found at  $1434\text{ cm}^{-1}$  for organocyclosiloxanes with phenyl groups. The  $1034\text{ cm}^{-1}$  band ascribed to the  $\text{Si}-\text{C}_6\text{H}_5$  group by L. Spialter, D. S. Priest,

C. W. Harris (J. Amer. Chem. Soc. 77, 6227 (1955)) is masked by the vibrations of the  $\text{Si}-\text{O}-\text{Si}$  group; it appears distinctly in trimers only. Stretching vibrations of the  $\text{Si}-\text{CH}_3$  and  $\text{Si}(\text{CH}_3)_2$  groups were observed in all cyclo-

organosiloxanes in the form of broad bands at  $1258-1263\text{ cm}^{-1}$ . Bands at  $960$  and  $1010\text{ cm}^{-1}$  were found for the ethyl radical bound to silicon corresponding to the  $\text{CH}_2$  group.

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ponding to those reported by C. W. Joung et al. (J. Amer. Chem. Soc. 70, 3758 (1948)). Stretching vibrations of the methyl and methylene groups appear at 2885 - 2974 and 2923  $\text{cm}^{-1}$  as in carbon compounds. There are 1 figure and 1 table.

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TSITSISHVILI, G. V., BAGRATISHVILI, G. D., BARNABISHVILI, D. N., BEZHASHVILI, K. A., Institute of Physical and Organic Chemistry imeni P. G. Molikishvili, Academy of Sciences Georgian SSR (Institut fizicheskoy i organicheskoy khimii AN GruzSSR)

"Adsorption of Benzene Vapors on Hydrogen and Decationized Forms of Zeolites"

Moscow, Doklady Akademii Nauk SSSR, Vol 168, No 4, 1966, pp 860-863

Abstract: The adsorption of benzene vapors on hydrogen zeolites and decationized forms of zeolites was studied. The initial zeolites were sodium forms of type X and type Y with  $\text{SiO}_2/\text{Al}_2\text{O}_3$  ratios of 2.40, 2.36, and 4.1.

Ammonium zeolites and hydrogen zeolites were produced from these forms. Benzene vapors were found to be considerably better adsorbed on hydrogen zeolites (produced under vacuum) than on the original sodium zeolite NaX, with an increase in the adsorption capacity with increasing degree of substitution from 20-40 to 75%. The adsorption and desorption isotherms coincided. A different situation was observed for hydrogen zeolites produced from ammonium zeolites by heating in air: the adsorption isotherm for hydrogen zeolite with 20% degree of substitution lies above that for the sodium form; the adsorption of benzene vapors on hydrogen zeolites with greater degree of substitution (40 and 75%) was lowered for relative pressures less than 0.2-0.3. Heating of the hydrogen zeolites to 5500 (decationization) yielded adsorbents characterized by somewhat increased adsorption capacity with respect to benzene vapors in comparison with the

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corresponding hydrogen zeolites with 20-40% degree of substitution; the opposite was observed for a sample with 75% degree of substitution, probably as a result of decomposition of the zeolite at the high degree of substitution. On type Y zeolites, hydrogen zeolites produced from ammonium zeolites by heating under vacuum were characterized by somewhat increased adsorption capacity with respect to benzene vapors in comparison with the sodium zeolite, whereas hydrogen zeolites formed by heating the ammonium forms in air possessed somewhat lower adsorption capacity than the sodium zeolites. A strong influence of the degree of substitution of the sodium ion by the ammonium ion was noted. No significant change in the shape of the isotherm was observed in the transition from sodium zeolites to hydrogen zeolites of type Y. The authors thank L. I. Piguzovaya and B. A. Lipkind for providing zeolite samples for analysis, and Ts. A. Gedzhadze and S. S. Chkheidze for the x-ray characteristic. Orig. art. has 1 figure and 1 table. /JPRS: 38,970/

TOPIC TAGS: adsorption, neolite, benzene

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